

REMARKS

Claims 1-4, 7, 9 and 10 are pending. Claims 5, 6, 8 and 11-33 have been canceled. Claim 1 has been amended, incorporating the subject matter disclosed on, *e.g.*, page 10, lines 22-23 and Examples 3 and 4 of the specification. No new matter is added. Favorable consideration of the currently pending claims is respectfully requested in light of the foregoing amendments and following remarks.

Interview Summary

The undersigned appreciates the courtesy extended by Examiner Kim during the telephone interview conducted on April 28, 2010. During the Interview, the undersigned sought clarification of the rejections in view of the claim amendments presented in the Amendment and Response filed September 21, 2009. In addition, the rejections in view of Rainer and England '522 were discussed. Agreement was not reached with respect to allowability of the claims, although the undersigned appreciates the Examiner's helpful explanation of the present rejections.

Rejections Under 35 U.S.C. § 102

Claims 1, 2 7 and 9 are rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,957,059 to Rainer *et al.* ("Rainer"). Applicant respectfully traverses the rejection in view of the amendment presented above and the following remarks.

Rainer discloses activated alumina impregnated with 5-30% sodium permanganate (Rainer, col. 1, lines 5-18) formed by impregnating alumina with sodium permanganate and a basic sodium compound (e.g., sodium hydroxide) (col. 3, lines 7-18). All of filters disclosed in Rainer's examples were formed by solution impregnating the permanganate in sodium hydroxide. As explained in the Declaration by William England Under 37 C.F.R. § 1.132 (the "Declaration") filed herewith by William G. England, the named inventor of the present application and of the England '522 and England '323 References cited in the Office Action (discussed below),

Rainer thus does not describe or contemplate a composition having relatively high levels of a permanganate *salt without inclusion of a basic sodium compound such as sodium hydroxide in the composition.*

Declaration, ¶ 10.

Claim 1 of the present application, as amended, relates to a filtration media composition "*consisting of* a porous substrate impregnated with a permanganate . . . having a solubility in water greater than that of potassium permanganate" and having a concentration in the composition of "approximately 8-25% permanganate salt by weight" (emphasis added). As explained in the Declaration:

This claim thus recites a composition that includes three ingredients: a porous substrate, a permanganate having a solubility in water greater than that of potassium permanganate, and water. I understand that the "consisting of" language in this claim excludes additional ingredients, such as sodium hydroxide or sodium bicarbonate, from the composition. I note, however, that as explained in my application the porous substrate can include a combination of substrate materials and that the permanganate salt can include a combination of permanganate salts.

Declaration, ¶ 8. The amended “consisting of” language of Claim 1 is a closed transitional phrase that excludes any ingredient not specified in the claim. *See* MPEP § 2111.03; *In re Gray*, 11 U.S.P.Q. 255 (C.C.P.A. 1931). Thus, Claim 1, as amended, excludes from the composition additional ingredients such as the sodium hydroxide disclosed in Rainer. Accordingly, applicant submits that Rainer, which utilizes a sodium hydroxide process to form its filter, does not anticipate Claim 1.

Moreover as further explained by Mr. England, applicant has produced

high capacity filtration media containing a permanganate such as sodium permanganate by using only an aqueous permanganate solution ***and without the use of compounds such as sodium hydroxide or sodium bicarbonate*** (see, e.g., Examples 3 and 4 of the specification). It is believed that, due to the hydrophilic nature of, e.g., sodium permanganate, it can remain soluble in an aqueous solution at much higher concentrations than potassium permanganate, allowing it to be impregnated onto filtration media in high concentrations without the use of an additional ingredient such as sodium hydroxide or sodium bicarbonate. The higher permanganate concentrations in this media provide substantial improvements in filtration capacity that enhances the life of the media.

Declaration, ¶ 15.

In view of the above, applicant respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Claims 2, 7 and 9 are dependent on amended Claim 1 and incorporate all of its limitations. As Claim 1 is believed allowable over Rainer, these claims are also believed to be allowable, and applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 102(b) be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 1, 2 and 7, 9 and 10 are rejected under 35 U.S.C. § 102(3) as obvious in view of U.S. Patent No. 6,004,522 to England *et al.* ("England '522"). Applicant respectfully traverses the rejection of the remaining claims in view of the amendment presented above and the following remarks.

As explained in the Declaration,

11. England '522 describes filtration media formed by impregnating alumina with potassium permanganate and at least 10% sodium bicarbonate (10-20% sodium bicarbonate in Example 9; 15-20% sodium bicarbonate in Examples 1 and 2). The concentration of potassium permanganate in the filtration media can be between 5 and 12% (col. 8, lines 12-20). Although the specification indicates that sodium bicarbonate may be "optionally" added (col. 9, lines 21-23), none of the examples in England '522 describe filtration media formed without sodium bicarbonate.

12. In fact, due to the relatively low solubility of potassium permanganate in water, in order to produce an effective filtration media having a potassium permanganate concentration greater than about 5% potassium permanganate, sodium bicarbonate or another comparable hydrophilic compound is ***required*** to sustain the higher concentration of permanganate in the filtration media. Sodium bicarbonate allows the potassium permanganate concentration in the filtration media to be increased because it is a hydrophilic compound that draws water into the filtration media and thus keeps the potassium permanganate from crystallizing out of solution.

13. Moreover, although England '522 suggests that permanganate salts other than potassium permanganate could be used in the filtration media, at the time the earliest priority application for England '522 was filed I had not produced filtration media having relatively high (>8%) levels of a permanganate salt using anything other than potassium permanganate, and I certainly had not contemplated that I (or anyone else) could form filtration media having relatively high levels of permanganate salt without using sodium bicarbonate or a comparable hydrophilic compound to allow the permanganate salt to stay in solution.

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16. As an expert in the subject matter described in the present application and as the sole inventor listed on the England '522 and England '323 references (two of the three references cited in the Office Action), I believe that I am in a unique position to describe exactly what was known (and unknown) in this field at the time the present application was filed. In my opinion, it was not known or contemplated that relatively high concentrations of permanganate salt could be impregnated into filtration media without the use of an additional ingredient such as the basic sodium compound described in Rainer or the sodium bicarbonate described in my England '522 and England '323 patents. Accordingly, in my opinion the presently claimed subject matter is neither disclosed in nor suggested by the references cited in the Office Action.

Declaration, ¶¶ 11-13 and 16. Accordingly, for at least the reasons provided above and discussed in the Declaration, applicant submits that England '522 fails to render obvious Claim 1 of the present application, as amended, and respectfully requests that the rejection of Claim 1 under 35 U.S.C. § 103(a) be withdrawn.

Claims 2, 7, 9 and 10 are dependent on amended Claim 1 and incorporate all of its limitations. As Claim 1 is believed allowable over England '522, these claims are also believed to be allowable, and applicant respectfully requests that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn.

Claims 3-5 are rejected under 35 U.S.C. § 103 as obvious in view of England '522 in combination with U.S. Patent No. 5,942,323 to England ("England '323") or as obvious in view of Rainer. Claim 5 has been canceled. Applicant respectfully traverses the rejection in view of the amendment presented above and the following remarks.

As explained by Mr. England in his Declaration,

England '323, my other patent relied upon by the Examiner in the Office Action, describes filtration media formed by impregnating a substrate with potassium permanganate and sodium bicarbonate (see Examples 1-3). As with England '522, this reference does not provide any examples of filtration media formed in the absence of sodium bicarbonate.

Declaration, ¶ 14. England '323 thus does not cure the deficiencies of Rainer and England '522 discussed above.

Moreover, Claims 3-4 are dependent on amended Claim 1 and incorporate all of its limitations. As Claim 1 is believed to be allowable, these claims are also allowable, and applicant respectfully requests that the rejection of these claims be withdrawn.

CONCLUSION

Applicant respectfully requests reconsideration of the present application in view of the foregoing. Applicant submits that all claims are in condition for allowance. Such action is courteously solicited. The Examiner is respectfully invited to contact the undersigned if there are matters that can be addressed by telephone at 404-815-6500.

Respectfully submitted,

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